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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/051,364	01/18/2002	Rikk Crill	273886 (18897-018)	7649

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EXAMINER

AZARIAN, SEYED H

ART UNIT PAPER NUMBER

2621

DATE MAILED: 09/12/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Faegre & Benson LLP

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PATTSY

DUE DATE(S)	Drawings & ROA 12/12/02
ATTORNEY	JRY
DOCKETED	REN

Office Action Summary

Application No.
10/051,364

Applicant(s)
Rikk Crill

Examiner
Seyed Azarian

Art Unit
2621



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on Jan 18, 2002 is/are a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other:

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DETAILED ACTION

Claim Rejections - 35 U.S.C. § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5, 19-21 and 24, are rejected under 35 U.S.C. 102(b) as being anticipated by Takesue et al (U.S.5,216,541).

Regarding claim 1, Takesue et al discloses a method of characterizing an image for shape content, comprising: producing a Fourier transform optic pattern of the image with light energy, (see column 7, lines 14-20, a Fourier transformation lens, "producing" an intensity pattern display on the screen).

Spatial filtering the light energy from the Fourier transform optic pattern , (see Fig. 2, column 2, lines 51-56, refer to "spatial filter" to restrict an area receiving the output beam from the Fourier transformation).

By selecting light energy from discrete portions of the Fourier transform optic pattern at a plurality of angular orientations and separating such discrete portions from other portions of

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Fourier transform optic pattern to create a plurality of filtered patterns of light energy from those discrete portions, (see column 11, lines 49-56, the reading beam B entering the valve 15, is rotated in the direction of polarization, accordingly the direction of polarization of beam 12, is rotated depending on the intensity of the addressing beam A, (refer to angular orientation). The reflected beam passes through the polarizing "beam splitter" 14, depending on the intensity distribution of the addressing beam A, and enter into the display).

Detecting intensities of light energy as it is distributed in the filtered patterns for the respective angular orientations, (see column 6, lines 13-20, the beam intensity distribution formed on the surface of the screen, can be "detected" by two dimension photoelectric transducer, using an element such as CCD device).

And storing the intensities of light energy detected in the filtered patterns along with the respective angular orientations, (see above, and also column 14, lines 31-37, refer to memory display).

Regarding claim 2, Takesue et al discloses a method of claim 1, including: focusing the Fourier transform optic pattern onto an active optic area of a spatial light modulator, (see column 13, lines 36-46, a "spatial light modulator" of the reflecting and electrical addressing type, liquid crystal light valve, each of whose portions corresponds to each of the reference image display portion. This modulating input beam will form a "focus" on point 6b (area), through a focusing lens 17, from the image of the image S to be identified).

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Selectively activating portions of the spatial light modulator at selected angular orientations to rotate plane of polarization of the discrete portions of the light energy of the Fourier transform optic pattern; separating light with rotated plane of polarization from light without rotated plane of polarization; and detecting the intensities of light that has rotated plane of polarization, (see column 11, lines 47-60, the “respective portions” 70a in accordance with the light intensity of the addressing beam A. The reading beam B (refer to selecting portion of light), entering the valve 15, is rotated in the direction of “polarization”. Also the reflect beam then passes through the polarizing “beam splitter” 14, depending on the intensity distribution of the addressing beam A).

Regarding claim 3, Takesue et al discloses the method of claim 2, including selectively activating portions of the spatial light modulator at selected segments positioned at different radial distances from an optic axis of the Fourier transform optic pattern as well as in said angular orientations, (see column 8, lines 17-25, each image can be indicated on the center of beam, and corresponding correlation between the reference images and the image (different radial), to be identified (selected) in a pair of patterns at positions which are symmetric to each other with respect to the “optical axis”, having “distance”, from the center of the beam which correspond to correlative position between the reference image and the image to be identified).

Regarding claim 24, Takesue et al discloses the spatial light modulator of claim 19, wherein the active optic area includes a rectangular array of optic sensors and each active optic modulator comprises a group of the optic sensors that are actuateable together simultaneously to

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modulate light and that together in the group are configured to form a composite of the active optic elements extending radially in relation to the central axis, (see column 2, lines 41-48, refer to displaying simultaneously coherent images).

With regard to claims 4-5 and 19-21, arguments analogous to those presented for claims above are applicable.

Claim Rejections - 35 U.S.C. § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6-11, are rejected under 35 U.S.C. 103(a) as being unpatentable over Takesue et al (U.S.5,216,541) in view of Xiang et al (U.S.5,363,043).

Regarding claim 6, Takesue et al discloses the method of claim 1, including: producing a plurality of ghost images around the image that is being characterized, each ghost image having shape content that is substantially the same as the image being characterized; and producing the Fourier transform optic image from the ghost images along with the image being characterized, (see claims above).

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However Takesue et al does not explicitly state “ghost images”. On the other hand Xiang et al, teaches (see column 3, line 65, through column 4, line 5, image arrays on a pixel-by-pixel basis to “produce”, corresponding pixels of ghost image arrays).

Therefore it would have been obvious to a person of ordinary skill in the art at time the invention was made, to modify Takesue et al invention according to the teachings of Xiang et al because these artifacts are commonly called “ghost” and collectively comprise a ghost mask. Do to the inconsistent appearance of the object from view to view.

Regarding claim 7, Takesue et al discloses the method of claim 6, including producing the ghost images with each ghost image having less light energy than the image being characterized, (see above claims also column 9, lines 37-45, refer to portion of the photoelectric transducer which less irradiated by the beam, and reducing of the light intensity).

Regarding claim 9, Takesue et al discloses the method of claim 8, including dispersing the plurality of ghost images in a symmetrical manner around the image being characterized, (see column 8, lines 17-24, correlation between the reference images and the image to be identified appear in a pair of patterns at positions which are “symmetric” to each other with respect to the optical axis).

With regard to claims 8, 10-11, arguments analogous to those presented for claims above are applicable.

5. Claims 12-18 and 22-23, are rejected under 35 U.S.C. 103(a) as being unpatentable over as applied to claim above, and further in view of Yu et al (U.S.5,539,411).

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Regarding claim 12, Takesue et al discloses an optical image shape content analyzer, comprising: a Fourier transform lens having a focal point in focal plane at a focal distance, (see Fig. 2, item 21, column 11, lines 62-67, refer to Fourier transformation lens).

An image producing spatial light modulator with an associated monochromatic light source, wherein the image producing spatial light modulator is addressable to produce an image in an optic pattern with light from the associated monochromatic light source, said image producing spatial light modulator being positioned to project such an image optic pattern of monochromatic light through the Fourier transform lens to form a Fourier transform optic pattern of the image optic pattern at the focal plane of the Fourier transform lens, (see above claims)

However neither Takesue et al nor Xiang et al explicitly state “ monochromatic light ” . On the other hand Yu et al, teaches (see column 4, lines 16-21, a preferred source of light is a source of “monochromatic laser light having a wavelength approximately 1.3 microns so that the monochromatic laser light may be transmitted through polarization maintaining optical fiber 72).

Therefore it would have been obvious to a person of ordinary skill in the art at time the invention was made, to modify Takesue et al and Xiang invention according to the teachings of Yu et al because it is term that applied to a monitor that display only variable levels of a single color, such as a gray-scale monitor, or range of intensities in a single color.

With regard to claims 13-18 and 22-23, arguments analogous to those presented for claims above are applicable.

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Other prior art cited

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. patent (5,659,637) to Bagley Jr. et al is cited for vander lugt optical correlator on a printed circuit board.

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seyed Azarian whose telephone number is (703) 306-5907.

The examiner can normally be reached on Monday through Thursday 6:00 a.m. to 6:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Boudreau, can be reached at (703)305-4706.

Any response to this action should be mailed to:

Assistant Commissioner for Patents
Washington, D.C. 20231

or faxed to:

(703) 306-0377, ("draft" or "informal" communications should be clearly labeled to expedite delivery to examiner)

Hand delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, VA., Sixth Floor (Receptionist).

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Any inquiry of a general nature or relating to the status of this application should be directed to the T.C. customer service office whose telephone number is (703) 306-0377.

Seyed Azarian

Patent Examiner

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Sep. 2, 2002



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